

CLAIMS

1. A configurable lookup table system, comprising:
 - a first controller coupled to a first lookup table, wherein the first controller configures the first lookup table for a first type lookup; and
 - a second controller coupled to a second lookup table, wherein:
 - (a) in a first mode, the second controller configures the second lookup table for a second type lookup; and
 - (b) in a second mode, the second controller configures the second lookup table for the first type lookup.
2. The configurable lookup table system of claim 1, wherein:
 - the first type lookup includes a Layer 2 lookup.
3. The configurable lookup table system of claim 2, wherein:
 - the Layer 2 lookup includes a Media Access Control (MAC) address lookup.
4. The configurable lookup table system of claim 1, wherein:
 - the second type lookup includes a Layer 3 lookup.
5. The configurable lookup table system of claim 4, wherein:
 - the Layer 3 lookup includes an Internet Protocol (IP) address lookup.
6. The configurable lookup table system of claim 1, wherein:
 - a lookup in the second mode includes:
 - (a) a first level in the second lookup table; and
 - (b) a second level in the first lookup table.
7. The configurable lookup table system of claim 6, wherein:
 - the second level in the first lookup table is configured:
 - (a) to be performed if a miss indication from the first level in the second lookup table; and
 - (b) to not be performed if a hit indication from the first level in the second lookup table.

8. The configurable lookup table system of claim 6, wherein:
the second lookup table includes a usable entry width of at least 72-bits.
9. A method of controlling a lookup table system, comprising:
determining a first mode or a second mode; and
when in a first mode:
 - (a) using a first lookup table for a first type lookup; and
 - (b) using a second lookup table for a second type lookup;when in a second mode:
 - (a) splitting the first type lookup into a first level and a second level;
 - (b) using the second lookup table for the first level; and
 - (c) using the first lookup table for the second level.
10. The method of controlling the lookup table system of claim 9, wherein:
the first type lookup includes a Layer 2 lookup.
11. The method of controlling the lookup table system of claim 10, wherein:
the Layer 2 lookup includes a Media Access Control (MAC) address lookup.
12. The method of controlling the lookup table system of claim 9, wherein:
the second type lookup includes a Layer 3 lookup.
13. The method of controlling the lookup table system of claim 12, wherein:
the Layer 3 lookup includes an Internet Protocol (IP) address lookup.
14. The method of controlling the lookup table system of claim 9, wherein:
the second lookup table includes a usable entry width of at least 72-bits.
15. The method of controlling the lookup table system of claim 9, wherein:
the splitting the first type lookup into the first level and the second level includes
configuring for a parallel operation.

16. The method of controlling the lookup table system of claim 9, wherein:
the splitting the first type lookup into the first level and the second level includes
configuring for a serial operation.
17. The method of controlling the lookup table system of claim 16, wherein:
the using the first lookup table for the second level is dependent on a miss indication
from the using the second lookup table for the first level.
18. A means for controlling a lookup table, comprising:
a means for determining a first mode or a second mode; and
when in a first mode:
 (a) a means for using a first lookup table for a first type lookup; and
 (b) a means for using a second lookup table for a second type lookup;
when in a second mode:
 (a) a means for splitting the first type lookup into a first level and a second
 level;
 (b) a means for using the second lookup table for the first level; and
 (c) a means for using the first lookup table for the second level.
19. The means for controlling the lookup table of claim 18, wherein:
the means for splitting the first type lookup into the first level and the second level
includes means for configuring for a parallel operation.
20. The means for controlling the lookup table of claim 18, wherein:
the means for splitting the first type lookup into the first level and the second level
includes
means for configuring for a serial operation.